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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/556,693	04/21/2000	Ralf Bohnke	450117-02477	6440
20999	7590	03/30/2005	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			LUGO, DAVID B	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

**Application No.**

09/556,693

**Applicant(s)**

BOHNKE ET AL.

**Examiner**

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5, 10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5, 10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 10/7/04 have been fully considered but they are not persuasive. Regarding claims 5, 10, 12 and 13, applicant argues that Mizoguchi et al. fail to teach that the last six complex symbols of the first and second parts of the preamble are (1-i), (-1-i), (1-i), (-1-i), (-1+i), (1+i). However, Mizoguchi et al. disclose a synchronization preamble having identical first and second parts, and applicant's disclosure of prior art discloses a preamble having a second part having the last six symbols as indicated above. Accordingly, it is believed that applicant's disclosure of prior art in combination with Mizoguchi et al. render obvious the added claim limitation. New claim 14 is also addressed below.

### ***Claim Objections***

2. Claims 5, 10 and 12-14 are objected to because of the following informalities:

Claim 5 - line 15, claim 10 - line 16, claim 12 - line 14, claim 13 - line 18, and claim 14 - line 10 each recite "the synchronization preamble signal." There is insufficient antecedent basis for this limitation in the claims. It is unclear if "the synchronization preamble" refers to the "preamble signal", or just one of the first or second portions of the preamble signal.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 12 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 12 recites an OFDM transmitter comprising means for generating and means for transmitting a preamble signal. Claim 14 recites a device for generating and transmitting a preamble signal comprising means for transmitting a preamble signal and means for dividing the preamble signal into at least one first part and at least one second part. These limitations are written in means plus function form, invoking 35 U.S.C. 112, 6<sup>th</sup> paragraph. According to MPEP § 2185, section II, if one employs means plus function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language. If applicant fails to do so, “the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the 112, second paragraph.” It is noted that the recited means are not described in the written description, nor is the transmitter shown in the drawings. Since the recited means plus function limitations are not described or supported by corresponding structure, material or acts in the specification disclosure, the claims do not particularly point out the subject matter which applicant regards as his invention. See MPEP § 2185.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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7. Claim 14 is rejected under 35 U.S.C. 102(a) as being anticipated by applicant's disclosure of prior art.

8. Regarding claim 14, applicant discloses a prior art known synchronization preamble in Figure 1 for use in an OFDM transmission system having a transmitter for transmitting the preamble, where the preamble has a first part (A-FIELD) designed for a coarse frame detection and AGC, and a second part (B-FIELD) for timing and frequency synchronization (page 1, lines 13-20 of the instant application), the first and second parts contain IFFT frequency domain sequences of complex symbols, where the time domain of the preamble is generated by mapping frequency domain sequences of 12 complex symbols to a 64 point IFFT, the remaining inputs being set to zero, and wherein the sequence of the second part (B-FIELD) is depicted by:

$$S_{-26,+26} = N * (0,0,S1,0,0,0,S2,0,0,0,S3,0,0,0,S4,0,0,0,S5,0,0,0,S6, \\ 0,0,0,0,0,0,S7,0,0,0,S8,0,0,0,S9,0,0,0,S10,0,0,0,S11,0,0,0,S12,0,0),$$

N being a power normalization factor and S1-S12 being complex symbols, as shown in page 2, lines 3-23 of the instant application.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 5, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's disclosure of prior art in view of Mizoguchi et al. "A Fast Burst Synchronization Scheme for OFDM."

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11. Regarding claims 5, 10, 12 and 13, applicant discloses a prior art known synchronization preamble in Figure 1 for use in an OFDM transmission system having a transmitter and a receiver, where the preamble has a first part (A-FIELD) designed for a coarse frame detection and AGC, and a second part (B-FIELD) for timing and frequency synchronization (page 1, lines 13-20 of the instant application), the first and second parts contain IFFT frequency domain sequences of complex symbols, where the time domain of the preamble is generated by mapping frequency domain sequences of 12 complex symbols to a 64 point IFFT wherein the last six complex symbols of the second part are (1-i), (-1-i), (1-i), (-1-i), (-1+i), (1+i), the remaining inputs being set to zero, and wherein the sequence of the second part (B-FIELD) is depicted by:

$$S_{-26,+26} = N * (0,0,S1,0,0,0,S2,0,0,0,S3,0,0,0,S4,0,0,0,S5,0,0,0,S6, \\ 0,0,0,0,0,0,S7,0,0,0,S8,0,0,0,S9,0,0,0,S10,0,0,0,S11,0,0,0,S12,0,0),$$

N being a power normalization factor and S1-S12 being complex symbols, as shown in page 2, lines 3-23 of the instant application.

12. Applicant's disclosure of prior art does not show that the first sequence and the second sequence are identical, wherein the first sequence would have the same last six symbols as the second part.

13. Mizoguchi et al. disclose a synchronization scheme for OFDM including a preamble having a first part and a second part that are identical, each part including a 64 point DFT (see page 125, section III, Fig. 2).

14. It would have been obvious to one of ordinary skill in the art to use the teachings of Mizoguchi et al. of having the first part and the second part of a synchronization preamble be identical, such that the last six symbols of each part would also be identical, in combination with

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applicant's disclosure of prior art because it enables accurate detection of frequency offset (see Mizoguchi et al., p. 126, section 4.1).

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Lugo  
3/21/05



**KHAI TRAN**  
**PRIMARY EXAMINER**